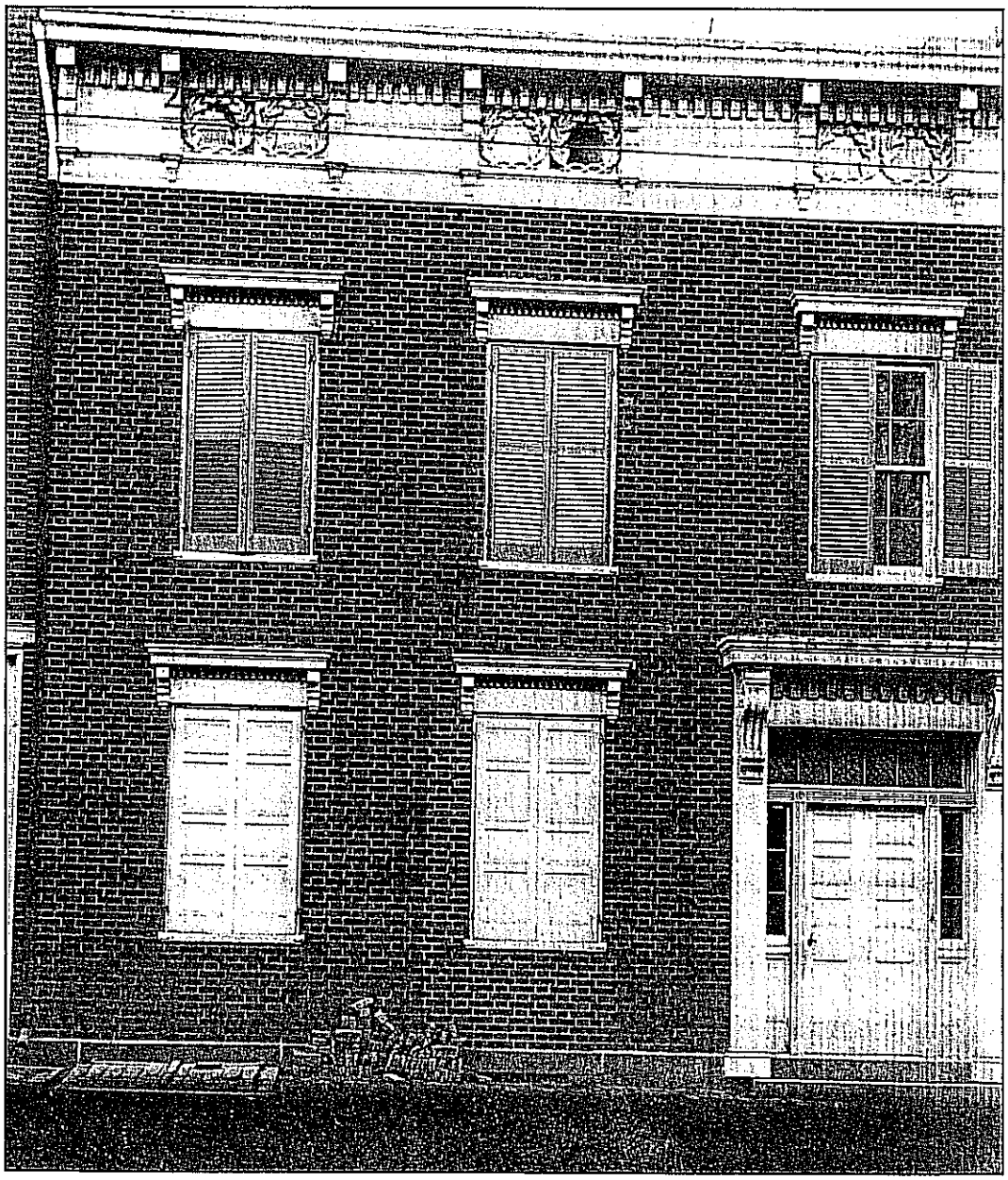
WINDOWS AND DOORS



The building at 22-22½ Chambersburg Street in 1902, prior to renovations.
Photo courtesy of the Adams County Historical Society.

WINDOWS AND DOORS

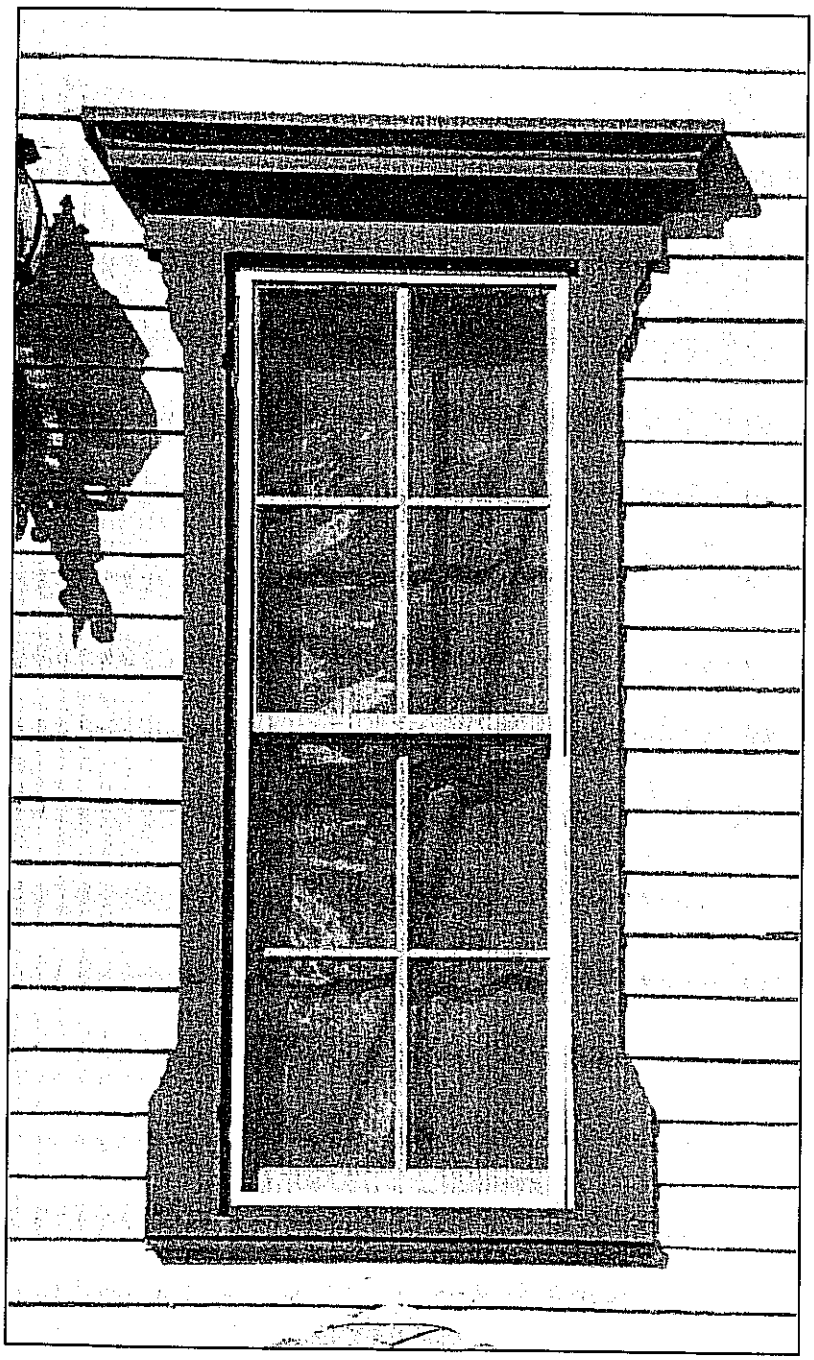
The Significance of Windows and Doors in Gettysburg

Windows and doors are among the most prominent features of buildings in Gettysburg.

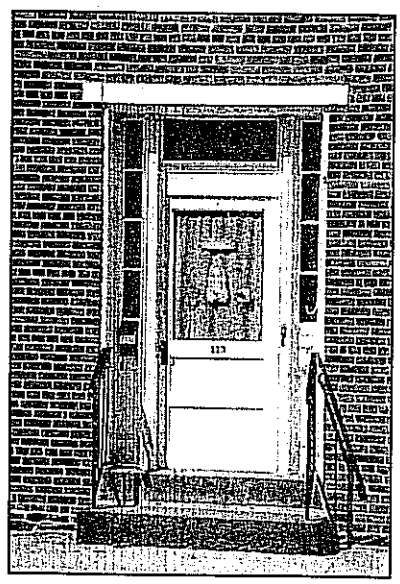
Windows typically comprise about 20 to 30 percent of a historic building's surface area, and they act as both interior and exterior elements. Historic doors often used size and detailing to draw attention to the entrance.

Significant parts of doors and windows include their materials and shape, panel and pane arrangement, moldings, hoods, fanlights, and sidelights.

Windows and doors receive consistently hard use, but they are so thoroughly integrated into the structure of a house that complete replacement is rarely advisable. Repair and weatherization are often more practical and economical than most property owners realize.



A historic window at 48 North Washington Street.

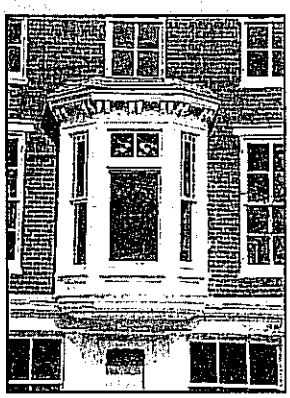


A historic doorway at 137 West Middle Street.

WINDOWS AND DOORS

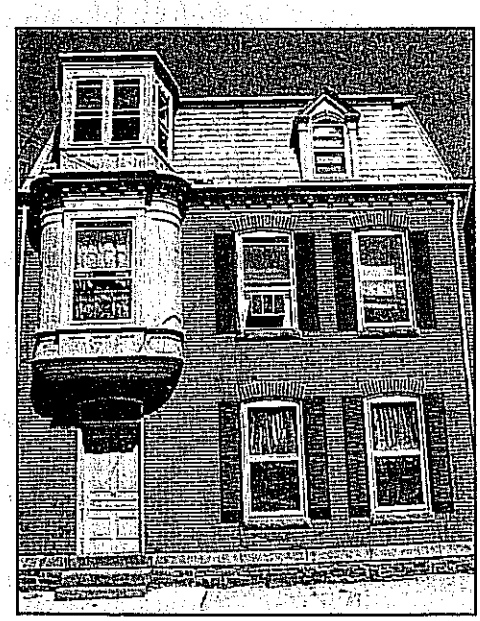
Windows and doors are significant and should be retained if they:

1. Are original.
2. Reflect the original design intent for the building.
3. Reflect period or regional styles or building practices.



An oriel window in the 100 block of Carlisle Street.

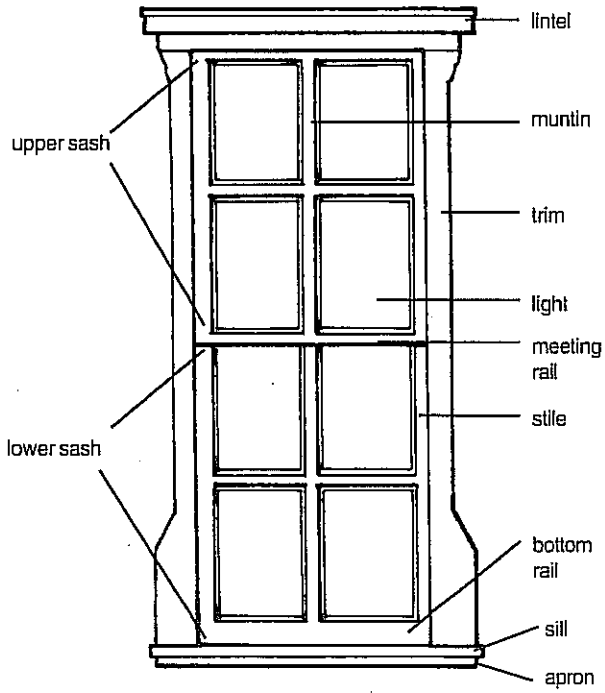
4. Reflect changes to the building from major events.
5. Are examples of exceptional craftsmanship or design.



Many buildings in Gettysburg feature oriel windows (bay windows above the first floor) such as this house at 47 West Middle Street. Because of their detailing and craftsmanship, these windows are significant.

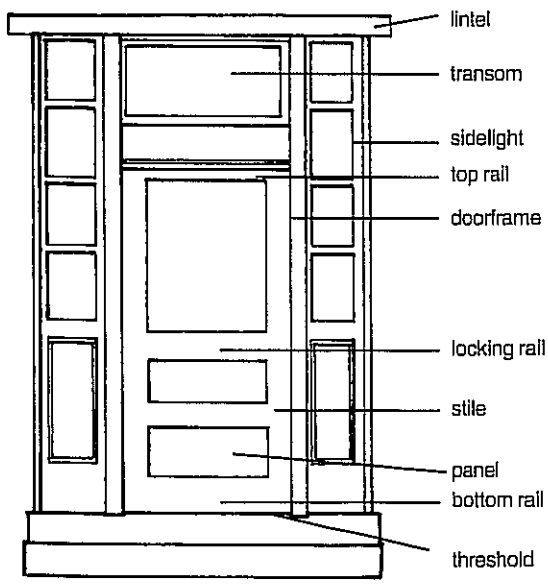
PARTS OF WINDOWS AND DOORS

Windows are typically composed of sash in a frame with surrounding trim.



The window at 48 North Washington Street.

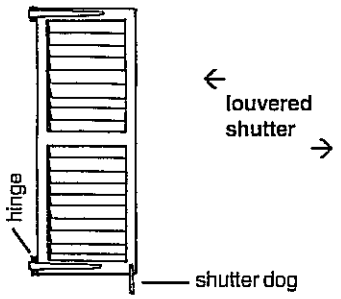
Doors are typically composed of panels and rails that are placed in frames. Doors are often combined with transoms and sidelights to create a more elaborate doorway.

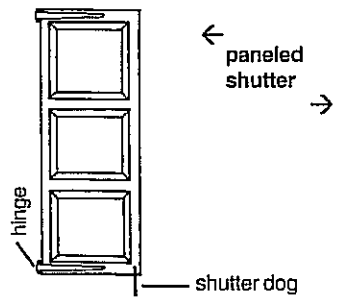


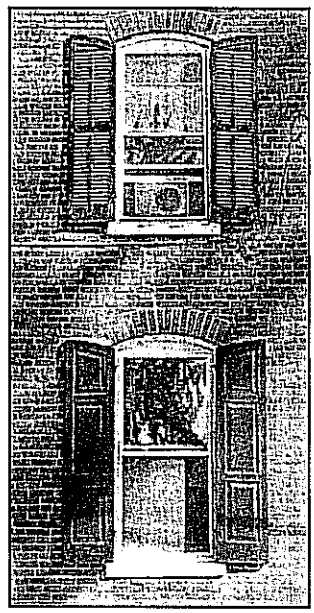
The doorway at 137 West Middle Street.

SHUTTERS

Shutters were used historically for insulation. They closed over window and door openings to keep the wind and sun out. Shutters are rarely used for this purpose today, but on a historic building they should still appear functional.







Louvered and paneled shutters at 341 Baltimore Street.

When are Shutters Appropriate?

Shutters were not installed on all buildings, and should only be added to those historic buildings that did have them. Shutters were used on most Federal style buildings, and were less frequently used on Greek Revival, Italianate, and Queen Anne buildings. (See the history at the beginning of this guide for more information on these styles.) Look for holes near the top and bottom of your window frames, or faded silhouettes of shutters on your exterior walls, or shutter anchors on the wall near your windows. If this evidence exists, shutters may be appropriate for your building.

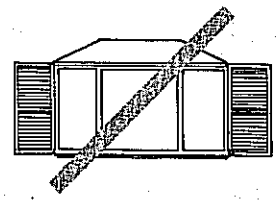
Shutter Guidelines:

- Shutters should be attached to the face of the window frame with hinges — not to the wall.
- Many buildings in Gettysburg were fitted with paneled shutters at the first story and louvered shutters at the second story. Replacement shutters should duplicate this pattern.
- Retain ornamental anchors.
- Horizontal divisions of shutters should match those of the sash.
- New shutters should be made of wood.
- Shutters should be installed only if they were used historically.

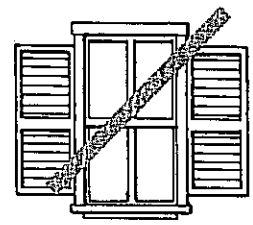
WINDOWS AND DOORS

Shutter Guidelines

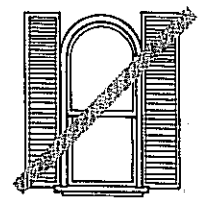
Shutters are not appropriate for bay windows, most dormers, and most other ornamental windows.



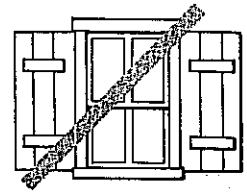
Shutter height should match sash height.



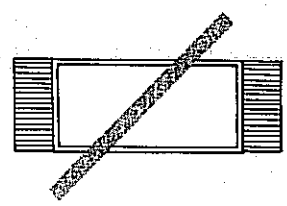
Shutter shape should match window shape.



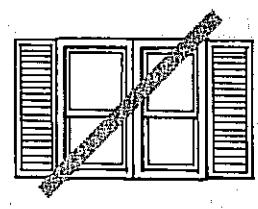
Shutters should be louvered or paneled.



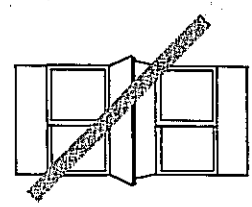
Each shutter should cover ½ the entire window opening.



Shutters are not appropriate for bands of adjacent windows.



Shutters should lie flat without overlapping when open.



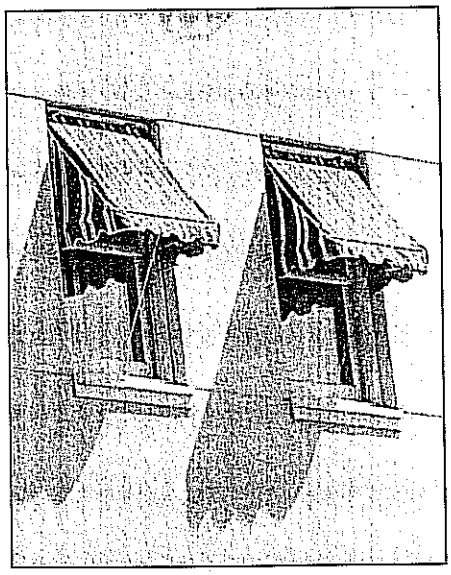
WINDOWS AND DOORS

Awnings

In the first half of the 20th century, canvas awnings were often installed on new residences and were added to older residences. Awnings can enhance the appearance of a building and can be up to seven times more effective than drapes in controlling heat gain.

Guidelines for Awnings:

- The top of the awning should conform to the shape of the window or door opening.
- The awning should be contained within the opening.
- Awnings and their associated hardware should not damage or hide existing historic materials or features.
- Canvas or other flexible, natural materials are preferred. Rigid awnings should not be installed.



Striped awnings on the windows of the Gettysburg Hotel.

NOTE: For information on awnings and commercial buildings, see the chapter on commercial buildings later in this manual.

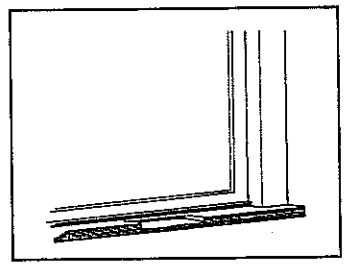
WINDOW AND DOOR REPAIR IN GETTYSBURG

The options for repairing, rehabilitating, and replacing historic wood windows and doors directly relate to the degree of deterioration present.

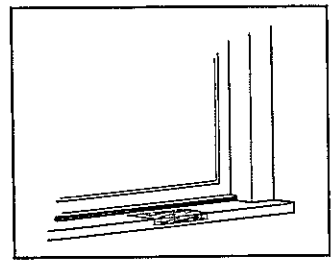
OPTIONS

1 **FIRST CHOICE:** Undertake routine maintenance on windows and doors. This may include replacement of broken panes, repair of sash cords, removal and reapplication of caulking, putty, and weatherstripping, and scraping, sanding, priming, and repainting.

2 **SECOND CHOICE:** Repair decayed parts in place. If wood is badly rotted, treat with fungicide, saturate with linseed oil, fill cracks and holes with putty, consolidate with epoxy or patching compound, sand, prime, and paint.

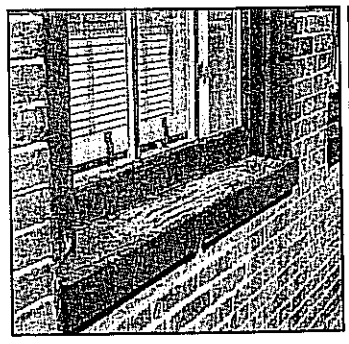


a

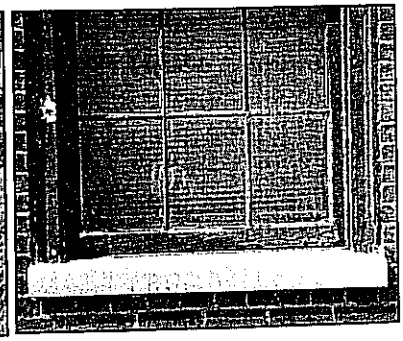


b

3 **THIRD CHOICE:** Without replacing the entire unit, replace parts of the frame and sash or door by patching, splicing, and piecing in (a). Using surviving parts as models, choose replacement parts that match the original in size, shape, material, and all detailing (b). If a majority of a member is deteriorated (c), replace the entire member (d) using the old one as a pattern for the new.



c



d

4 **FOURTH CHOICE:** If a majority of the components of the window sash and frame, or door and door frame, require replacement, consider replacing the entire unit using the guidelines on the next page.

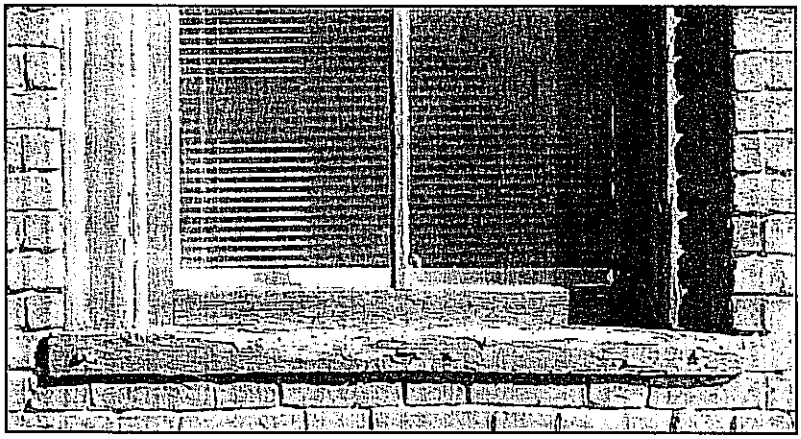
WHEN TO REPLACE WINDOWS AND DOORS

Wood windows and doors are subject to deterioration from years of use, water accumulation, and insects. But, deteriorated wood windows and doors may look worse than they are. The most commonly affected areas, the sill and the lower rail, often can be restored without replacing the entire unit. In most cases, even if individual units are severely deteriorated, replacement of all the windows and doors in an historic building is seldom necessary and should be avoided. Four out of five times, the verdict to replace an entire window is due only to a rotted sill.

Signs that a Window or Door Needs *Maintenance* or *Repair*

- Loose putty
- Air infiltration
- Stuck sash
- Broken sash cords
- Broken glass
- Peeling paint

*These conditions alone do **not** warrant replacement.*



A deteriorating window sill in Gettysburg.

Signs that a Window Should be *Replaced*:

- The existing window cannot be made to fit tightly in the wall because of settlement or deterioration in the outside wall.
- Materials or skills required to repair the window are not available.
- Substantial parts of the window are missing or are so severely damaged that they must be replaced.

Caution:
Removing window or door units for repair increases the likelihood of damage. Attempt to repair windows and doors in place.

WINDOWS AND DOORS

When are Windows and Doors Deteriorated Beyond Repair?

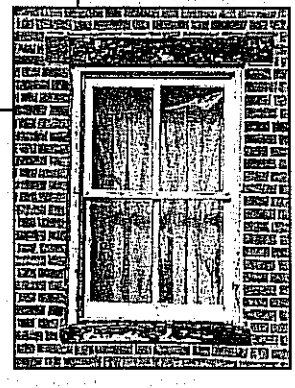
The ICE PICK TEST can help you determine the extent of deterioration in wood windows and doors.

- If an ice pick inserted into a wood member penetrates the wood less than 1/8 inch, then the wood is solid and the unit does **not** need to be replaced.
- If the ice pick penetrates ½ inch or more, the wood **may** have dry rot.

What To Do:

- If the condition has affected only a portion of a component, repair the damaged member.
- If the condition has affected a majority of a component, replace the infected member.
- If the condition has affected a majority of the components of the unit, consider replacement of the unit.

Wood windows and doors can be considered beyond repair when a majority of the component parts require replacement to make the unit weathertight and serviceable.



A window in need of maintenance in Gettysburg.

WINDOWS AND DOORS

Replacement Guidelines

- When a replacement is needed and work is being undertaken in other parts of the building, consider moving a historic window or door from an inconspicuous location to a more visible wall.
- When original windows are missing, replacements should be chosen based on historical, pictorial, or physical documentation. Avoid creating a false historic appearance due to insufficient documentation.
- Check salvage yards, antique stores, demolition companies, and custom manufacture companies for replacements. Be sure to reuse all serviceable historic hardware.
- For multi-pane replacement windows, replacements that have panes of glass divided by muntins (strips of wood) are the best choice. Snap-in muntins, surface applied muntins, and muntins between panes of glass should be avoided. They are not convincing because they don't have enough depth to provide a shadow.
- Picture windows, bay windows, and casement windows should be chosen as replacements only when these types are original to the building.
- Steel-covered hollow core doors have a poor finished appearance and often do not come in sizes and styles that are appropriate for historic buildings.

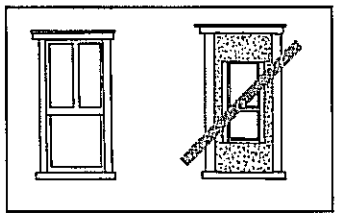
CHOOSING REPLACEMENTS

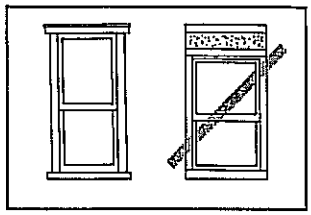
Once it has been determined that a window or door is beyond repair and must be replaced, the type of replacement unit must be chosen.

OPTIONS

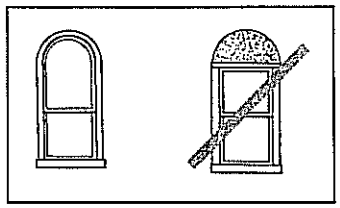
1 **FIRST CHOICE:** Choose replacement windows and doors that fit the original opening exactly and match the original units in material type, glass color and reflectivity, and:

Overall Size

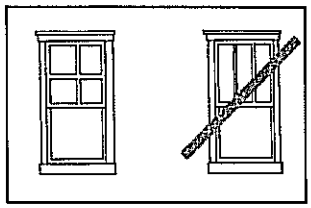




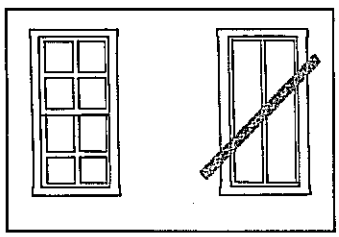
Shape



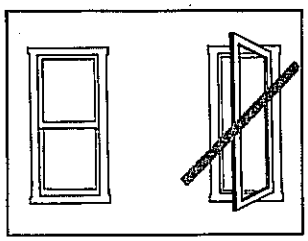
Number of panes



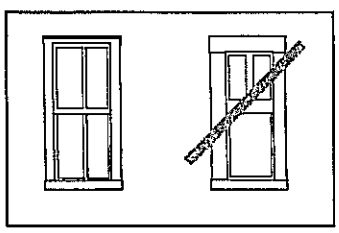
Arrangement of panes



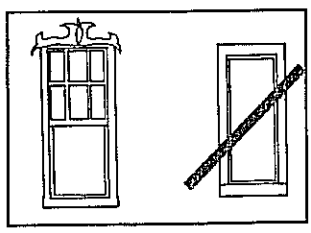
Type of operation



Component size (frames, muntins, etc.)



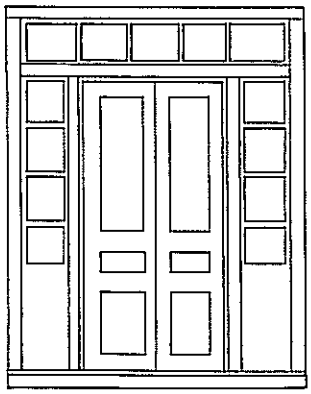
Decorative details



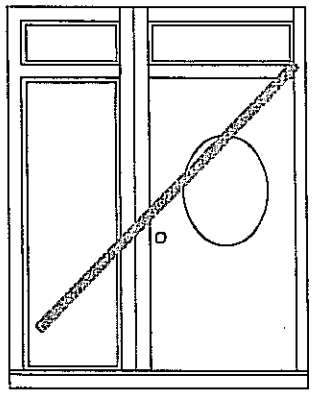
2 **SECOND CHOICE:** Choose windows and doors of a compatible material that match all the other design details of the original.

The Size of Window and Door Openings

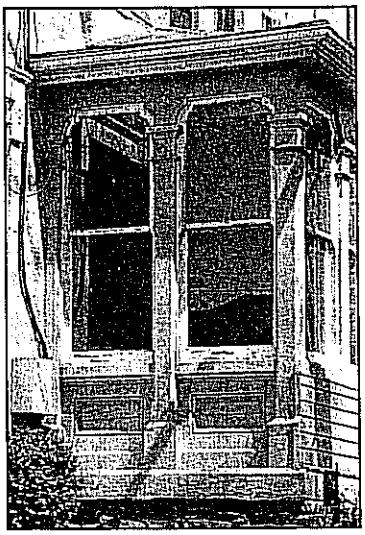
Maintaining the original size of door and window openings is important because the size contributes to the overall design and visual balance of the building. When replacing historic windows and doors, follow the guidelines below.



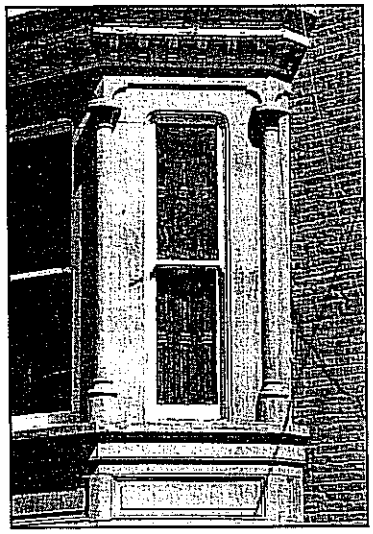
A historic entrance.



An incompatible modern entrance.



Historic windows with sash that completely fill the opening at 227 Carlisle Street.



An historic window opening reduced in size to accommodate a replacement sash that is too small.

Guidelines for Window and Door Size:

- Maintain the shape of window and door openings.
- Install window air conditioners on side or rear elevations.
- If a ceiling must be lowered at the interior, provide a setback or slope to allow the full height of the window to remain open.
- Maintain divisions created by sidelights and transoms in entryways.
- Avoid decreasing the size of window or door openings by partially filling them, especially to allow for stock size replacements.
- Avoid enlarging window or door openings to allow for picture windows, bay windows, casements, or other windows not original to the building.

WINDOWS AND DOORS

Making New Window and Door Openings

New window and door openings tend to destroy the rhythm and balance of historic buildings and their historic materials. For these reasons, creating a new opening is a last resort alteration, and new openings should never be added to the walls of buildings that are visible from the street.

OPTIONS

1 **1st CHOICE:** Locate the new opening on a wall that is not visible from a public street or alley.

2 **2nd CHOICE:** Locate the new opening on a side or rear elevation shielded from public view.

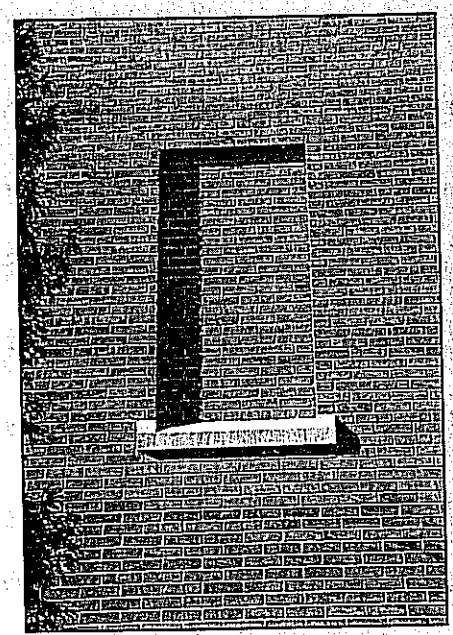
A window converted to a doorway in Gettysburg.

ALWAYS:

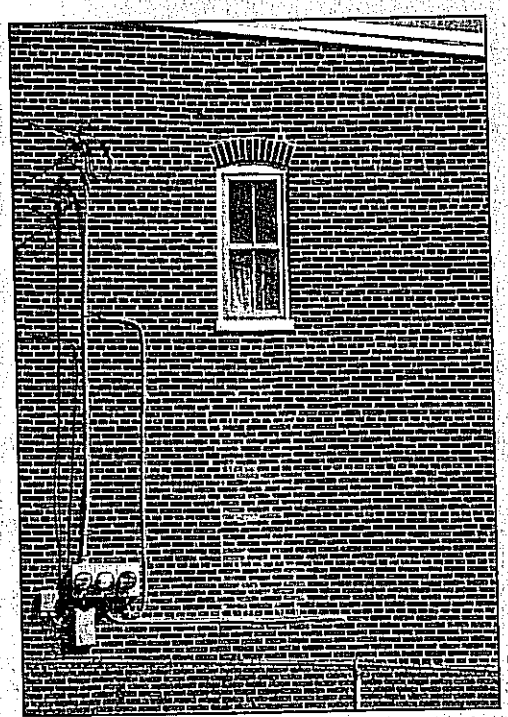
- Create new openings only in locations that will minimize the loss of historic materials and features.
- Create new openings that are compatible in size, scale, shape, proportions, and massing to the wall and the overall building.
- Document the original condition of the building and save removed historic materials for later use.

WINDOWS AND DOORS

Filled Window Openings in Gettysburg



A blank window opening filled with brick that matches the wall.



The change in mortar gives away the previous location of a window opening on this wall in Gettysburg.

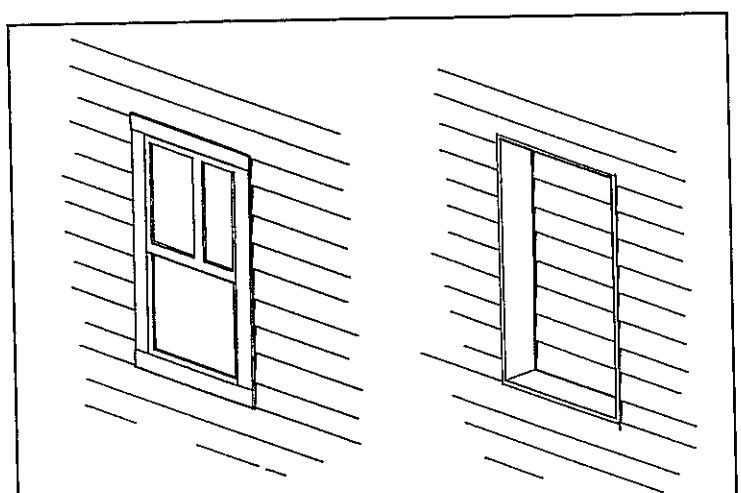
CLOSING WINDOW AND DOOR OPENINGS

Filling in historic window and door openings destroys the rhythm and balance of a building, and destroys historic materials. This type of alteration is rarely appropriate.

OPTIONS

1 **FIRST CHOICE:** Retain the historic window or door in place, with all its associated features. Add materials or treatments at the interior to make the units inaccessible and nonserviceable, while maintaining the external appearance. Painting glass black on the inside or adding other similar materials to achieve the same effect may be considered. Also consider installing shutters over windows and sealing doors.

2 **SECOND CHOICE:** If window or door units are missing or must be removed due to extensive deterioration, install new units of compatible design, and continue with Option #1.



A window opening filled with the material of the surrounding wall.

3 **THIRD CHOICE:** Fill the opening with a material that is compatible in appearance to the wall facing material. Be sure that the surface of the infill material is recessed from the face of the wall, and the original size and shape of the opening are maintained. Retain as much detailing and ornament in place as possible. Save any removed historic materials for later use.

INCREASING ENERGY EFFICIENCY IN WINDOWS

Old windows should never be replaced solely for the purpose of improving energy efficiency. An old window that has been properly repaired and provided with a well-fitted storm sash will be as efficient as a new, double-glazed unit.

OPTIONS

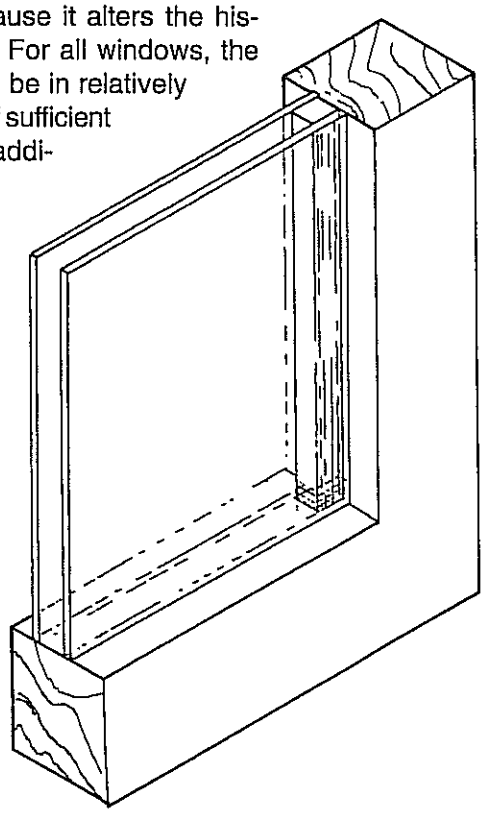
1 **FIRST CHOICE: Remove and reapply caulking, putty, and weatherstripping.**

Tighten the interior lock on the meeting rail of double-hung windows to fit the window tightly against the frame and to decrease air infiltration. See the next page for additional information on caulking and weatherstripping.

2 **SECOND CHOICE: Install properly designed and fitted storm units following the guidelines on the next page.**

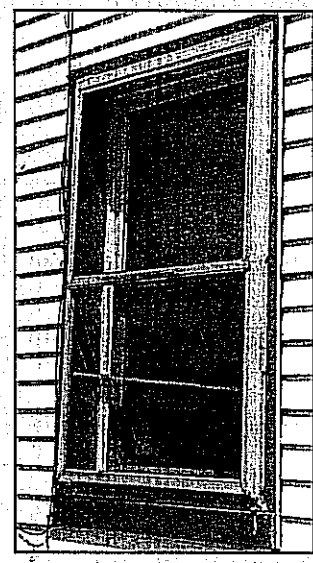
3 **THIRD CHOICE: Retrofit existing windows with additional glass.**

Retrofitting can be difficult and must be carried out with great care because it alters the historic window fabric. For all windows, the sash frame needs to be in relatively good condition and of sufficient size to handle the additional glass weight. Mechanical routing of the frame is usually required to accommodate the additional glass. The extra weight may require additions to the sash weights, for which there must be sufficient room in the weight pockets. For multipane sash, the muntin must also be both wide enough and strong enough to accept the additional glass.

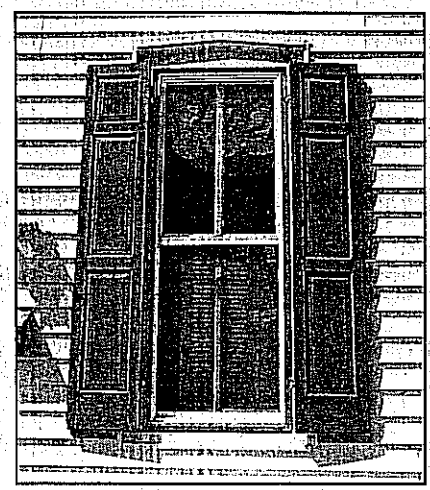


WINDOWS AND DOORS

Energy Efficiency in Gettysburg



A common triple track aluminum storm sash on a window in Gettysburg.



Shutters at 126 East Middle Street. Historically, shutters were used to keep the wind and sun out.

Modern Treatments for Windows

Some modern treatments for increasing the energy efficiency of windows, like "low-E" glass and the use of argon and krypton gas, may be appropriate for historic buildings. They are appropriate when they do not alter the character of the glass or the overall window from its historic appearance.

WINDOWS AND DOORS

Weatherstripping and Caulking

Air can leak between a window's sash and frame, between window and door frames and the adjacent wall surface, and where sash rails meet. Weatherstripping fills cracks around doors and windows to provide a tight seal and to eliminate drafts. Caulking seals gaps between building materials to prevent air and water infiltration.

Potential Areas for Weatherstripping and Caulking:

- Behind the track of window sash.
- Between the joining rails of the upper and lower sash.
- Along the bottom of sliding sash units.
- Around door frames.
- Around the inside perimeter of double hung windows.
- At the meeting rails of double hung sash.
- On the frame and along the full width of the door sill.
- Between corner boards and siding.
- Between sill plate and foundation.
- Any joints between masonry and wood.

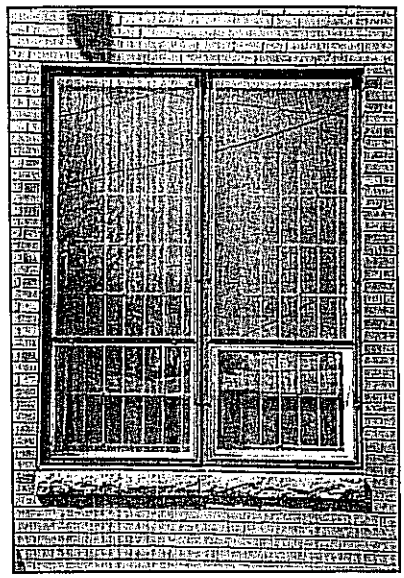
Hints:

- Correct installation of weatherstripping and caulk is essential. Follow the manufacturer's directions.
- Regularly inspect for and replace bent, torn, or loose weatherstripping.
- Joints larger than ½ inch deep and ½ inch wide should receive a foam backer before caulking.

NOTE: Storm windows are much more effective than storm doors. Storm doors and entrance vestibules are typically not cost effective. A properly weatherstripped door can outperform a door/storm door combination.

GUIDELINES FOR STORM WINDOWS AND DOORS

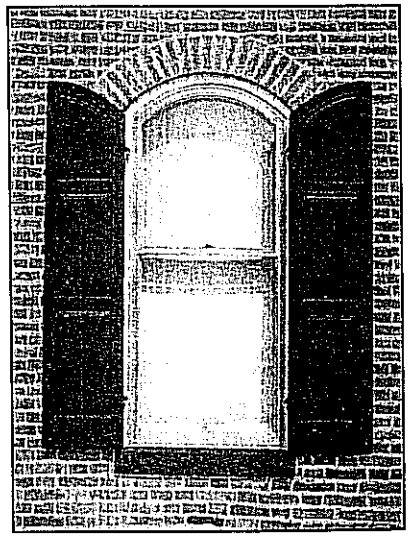
- Wood storm frames are preferred. They can be fabricated to fit any opening and are much more energy efficient than aluminum or vinyl because wood conducts heat more slowly than those materials. Well maintained wooden storms can last over 100 years — much longer than aluminum.



The storm sash on the windows of the St. James Lutheran Church have divisions that match those of the historic windows. This increases the compatibility between the storm sash and the historic window.

- Storm units should completely fill the opening. Any divisions should match existing divisions in the primary unit. Aim to reveal as much of the original unit as possible.

- Storm units should match the shape of the window or door opening. If the opening is arched, the storm unit should be arched.



Shutters should match the size and shape of the window opening, like these arched shutters at 270 Baltimore Street.

- Install storm units without damaging the original building fabric. Install caulking to ensure that moisture does not collect between the storm and the primary unit.

- Avoid storms with a natural aluminum finish. They should be painted to match window trim.

Remember:
Never replace a window or door if repair and maintenance can improve its performance and maintain its originality.